

- (d) A national network of oceanography peer trainers and resource persons will be developed.
- (e) A variety of instructional resource materials on the physical foundations of oceanography and related topics will be prepared and disseminated.

Approach

There are three major components to this program: summer workshops for master precollege teachers, the production of teacher enhancement instructional resource materials, and the peer-training of teachers. The intent is to provide a core group of teachers with the knowledge and instructional resources enabling them, in turn, to peer-train a large number of their peer teachers on selected topics potentially appropriate for pre-college classrooms.

Tasks Completed

In Summer 1997, a two-week workshop for pre-college teachers on the physical foundations of selected oceanographic topics was held at the United States Naval Academy in Annapolis, MD. An additional week of training was conducted for teachers who had participated in the two-week workshop in one of the previous two summers. Two new self-contained teacher-training modules entitled *Shallow-Water Ocean Waves* and *Ocean Sound* were completed for use by the peer trainers who attended the Summer 1997 workshops. An additional instructional resource activity entitled *Ocean Waves on the Web* was developed and published.

Results

With the training of 23 new participants in the Summer 1997 Maury Project workshop, a total of 95 teachers representing all 50 states, the District of Columbia, Puerto Rico, Canada, Great Britain, Australia, and US Department of Defense Overseas School System have become peer trainers. During 1997, 19 previous peer trainers received an additional week of training on new topics, the two new teacher-training guides, and the internet activity.

Impact

All Summer 1997 participants, including the returnees, are committed to offer a minimum of two training sessions for pre-college teachers in their home states and regions during the 1997-98 school year. These peer trainers will utilize support materials supplied by the project, including 4,000 printed copies of each of the new teacher-training guides. To see the multiplicative effect of this program, consider that during the past year, approximately 200 workshops were conducted by peer trainers across the country, reaching over 3,000 teachers, each of whom reaches about 100 students daily.

Transitions

Originally funded by the NSF for 3 summers starting in 1994, the existing Maury Project Summer Workshops at the Naval Academy have received additional NOAA, Navy, and AMS support which assures their offering through Summer 1998.

Publications and Presentations

Over 20 publications or conference presentations were made by Maury Project peer trainers at the 1997 Annual Meeting of the AMS, the 2nd International Conference on Geosciences Education, and 1996-97 National Science Teachers Association Conferences. These and additional publications or presentations made by the Maury Project staff include:

PAPERS PRESENTED AT NATIONAL CONFERENCES

Annual Meeting of the American Meteorological Society

P.E. Rumpp and G.W. Rumpp, 1997: "Global Oceans", presented at the 6th Symposium on Education [Feb 1997].

S. Clark, 1997: "Coastal Upwelling-Monterey Bay California", presented at the 6th Symposium on Education [Feb 1997].

D.M. Curry, 1997: "Investigating Environmental Quality: A School Community Partnership Model", presented at the 6th Symposium on Education [Feb 1997].

L. Greenleaf, 1997: "Connecting Kids and Classrooms by Internet", presented at the 6th Symposium on Education [Feb 1997].

L.E. Baker, 1997: "Maury Project Modules: Flexible Units for K-12 Teachers", presented at the 6th Symposium on Education [Feb 1997].

M.J. Passow, 1997: "Meteorology, Oceanography, and the National Science Education Standards", presented at the 6th Symposium on Education [Feb 1997].

M.J. Passow, 1997: "Portfolio Experiences in Oceanography Education", presented at the 6th Symposium on Education [Feb 1997].

1997 NSTA Meetings

L. Maston, C. Croone and L.Tellez, 1997: "All the Water in the Sea -A Workshop on Measuring Sea Level from Space", presented at the 1997 NSTA National Convention [Apr 1997].

K. Giesting, D. Mosher and P. Shuttleworth, 1997: "Ocean in Motion - A Workshop on Wind Driven Ocean Currents", presented at the 1997 NSTA National Convention [Apr 1997].

P. Lacey and M.A. Johnson, 1997: "A Workshop on Coastal Upwelling and Downwelling", presented at the 1997 NSTA National Convention [Apr 1997].

P. Rumpp and G. Rumpp, 1997: "The Maury Project: Deep Water - A Workshop on Density Driven Ocean Currents", presented at the 1997 NSTA National Convention [Apr 1997].

C. Bolay, 1997: "Authentic Earth Science Activities - A Workshop on Wind Driven Ocean Currents", presented at the 1997 NSTA National Convention [Apr 1997].

2nd International Conference on Geosciences Education

D. Mosher, 1997: "The Maury Project", presented at the 2nd International Conference on Geosciences Education, Hilo, HA [Jul 97].

D.R. Smith, 1997: "The Maury Project: An Education Partnership in Physical Oceanography" (with I.W. Geer and D.E. McManus), at the 2nd International Conference on Geosciences Education, Hilo, HA [Jul 97].

PUBLICATIONS:

Smith, D.R. (1996): "Update on the Maury Project". *Current - The Journal of Marine Education*, 13(4), 3-4.

Smith, P.K. and D.R. Smith (1996): "The Life and Work of Matthew F. Maury". *Current - The Journal of Marine Education*, 13(4), 8-9.

Smith, D.R., I.W. Geer, and D.E. McManus (1997): "The Maury Project - An Educational Partnership in Oceanography". *Bulletin of the American Meteorological Society*, 78(7), 1497- 1502.

Number of Grad Students Supported More than Half Time - None

Patents - None

Service on Outside Committees - None

Honors - None

Percentage of ONR Funds Sent on to Other Organizations - None

REPORT DOCUMENTATION PAGE

*Form Approved
OMB No. 0704-0188*

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (<i>Leave blank</i>)			2. REPORT DATE 1 October 1997		3. REPORT TYPE AND DATES COVERED Annual Report: 1 Oct. 1996 – 30 Sep. 1997	
4. TITLE AND SUBTITLE The Maury Project: Exploring the Physical Foundations of Oceanography			5. FUNDING NUMBERS G: N00014-96-1-0576 PR: 96 PRO 4574-00			
6. AUTHOR(S) Ira W. Geer						
7. PERFORMING ORGANIZATION NAMES(S) AND ADDRESS(ES) American Meteorological Society 45 Beacon Street Boston, MA 02108-3693			8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING / MONITORING AGENCY NAMES(S) AND ADDRESS(ES)			10. SPONSORING / MONITORING AGENCY REPORT NUMBER			
11. SUPPLEMENTARY NOTES						
a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release				12. DISTRIBUTION CODE		
13. ABSTRACT (<i>Maximum 200 words</i>) Twenty-three master precollege teachers attended a two-week workshop at the U.S. Naval Academy in July 1997 in preparation to become Maury Project Peer Trainers. They were supplied with Project instructional resource materials which they will use to train other teachers during the 1997-98 school year.						
14. SUBJECT TERMS Precollage Teacher Training					15. NUMBER OF PAGES 4	
					16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT		18. SECURITY CLASSIFICATION OF THIS PAGE		19. SECURITY CLASSIFICATION OF ABSTRACT		20. LIMITATION OF ABSTRACT UL



AMERICAN METEOROLOGICAL SOCIETY

Hdqtors: 45 Beacon Street, Boston, MA 02108 - 3693 (617) 227-2425

Richard E. Hallgren, Executive Director **Kenneth C. Spengler, Executive Director Emeritus**

EDUCATION PROGRAM

EDUCATION PROGRAM
1200 New York Avenue, N.W., Suite 410

2000 NEW YORK AVENUE,
Washington, D.C. 20005

(202) 682-9337

Facsimile: (202) 682-9341

Email: amsedu@dc.ametsoc.org

1 October 1997

To:

Office of Naval Research (3 copies)

Program Officer Robert M. Bassett ONR 322
Ballston Centre Tower One
800 North Quincy Street
Arlington, VA 22217-5660

Director, Naval Research Laboratory (1 copy)
Attn: Code 2627
4555 Overlook Drive
Washington, DC 20375-5326

Defense Technical Information Center (2 copies)
8725 John J. Kingman Road
STE 0944
Ft. Belvoir, VA 22060-6218

Please find enclosed copy(ies) of the Year 2 Annual Report for our ONR Domestic Research Grant N00014-96-1-0576.

Sincerely,

Lawyer

Ira W. Geer
Principal Investigator

DTIC QUANTITY INREFERRED